GenCore version 5.1.3

OM nucleic - nucleic search, using sw model

Run on: December 2, 2002, 00:22:39 ; Search time 356.279 Seconds
(without alignments)
10713.895 Million cell updates/sec

Title: US-09-856-979-6
Perfect score: 1695
Sequence: 1 ccgcagatccttctgtgtga.....tccatcaagccgtcgcgatg 1695

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 2185239 seqs, 1125999159 residues

Total number of hits satisfying chosen parameters: 4370478

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.		Score	% Query Match	Length	DB	ID	Description
1		1695	100.0	1695	22	AAF86442	Rice E1 promoter.
c 2		1695	100.0	2275	22	AAF86440	Oligonucleotide #1
3		1695	100.0	5349	19	AAV23239	T-DNA of pTTS24.
c 4		1695	100.0	6539	21	AAZ91097	E. coli plasmid pT
c 5		1695	100.0	6548	18	AAT61394	Plasmid pTS172. C
c 6		1695	100.0	6548	21	AAZ91096	E. coli plasmid pT
c 7		1695	100.0	7492	22	AAF86441	Plasmid pTS346. U
8		1693.4	99.9	2407	13	AAQ27488	GE1 promoter and 5
9		1693.4	99.9	2407	15	AAQ53881	Sequence comprisin
c 10		1693.4	99.9	6548	17	AAT39336	Plasmid pTS174 use
11		1690.4	99.7	6667	22	AAD03878	NotI fragment of p
12		1687	99.5	1687	22	AAD03888	E1 promoter from r
13		365	21.5	365	22	AAF86443	Deleted E1 promote
c 14		365	21.5	5228	22	AAF86439	Plasmid pTS172delt
c 15		77	4.5	1039	21	AAC37958	Arabidopsis thalia
c 16		73.6	4.3	848	21	AAC45264	Arabidopsis thalia
c 17		73.6	4.3	852	21	AAC37466	Arabidopsis thalia
c 18		72.6	4.3	965	24	ABN98530	Arabidopsis thalia
c 19		72.6	4.3	1022	21	AAC46022	Arabidopsis thalia
c 20		70.6	4.2	1037	21	AAC35979	Arabidopsis thalia
c 21		70.6	4.2	1134	21	AAC46307	Arabidopsis thalia
c 22		70.6	4.2	1160	21	AAC42139	Arabidopsis thalia
c 23		70.6	4.2	1162	21	AAC35280	Arabidopsis thalia
c 24		70.6	4.2	1163	21	AAC45562	Arabidopsis thalia
c 25		70.6	4.2	1173	21	AAC45561	Arabidopsis thalia
c 26		70.6	4.2	1177	21	AAC33374	Arabidopsis thalia
c 27		67	4.0	1257	21	AAC51083	Arabidopsis thalia
c 28		67	4.0	1259	21	AAC34564	Arabidopsis thalia
c 29		63.6	3.8	1348	21	AAC51796	Arabidopsis thalia
c 30		60.2	3.6	837	21	AAC42320	Arabidopsis thalia
c 31		60	3.5	293	24	ABL73463	Corn tassel-derive
c 32		59.6	3.5	709	24	ABQ65636	Arabidopsis thalia
c 33		59	3.5	1124	21	AAC51296	Arabidopsis thalia
c 34		59	3.5	1127	21	AAC47859	Arabidopsis thalia
c 35		53.6	3.2	304	24	ABL74167	Corn tassel-derive
c 36		52	3.1	776	21	AAC34104	Arabidopsis thalia
c 37		51.8	3.1	1098	21	AAC37589	Arabidopsis thalia
c 38		50.2	3.0	1097	21	AAC45513	Arabidopsis thalia
c 39		47.8	2.8	367	24	ABQ85545	Arabidopsis thalia
c 40		44	2.6	442	21	AAC38874	Arabidopsis thalia
c 41		41	2.4	10467	24	ABL49302	Human polynucleoti
c 42		39.2	2.3	8197	24	ABL70542	Chemically treated
c 43		39.2	2.3	8197	24	ABL34515	Human metastasis a
44		38	2.2	14103	22	AAI99350	Human excretory re
45		38	2.2	14103	22	AAK81278	Human immune/haema

ALIGNMENTS

RESULT 1
AAF86442
ID AAF86442 standard; DNA; 1695 BP.
XX
AC AAF86442;
XX
DT 25-JUN-2001 (first entry)
XX
DE Rice E1 promoter.
XX
KW Male sterile plant; RNAase inhibitor; rice; E1 promoter; ds.
XX
OS Oryza sativa.
XX
PN WO200124616-A1.
XX
PD 12-APR-2001.
XX
PF 12-SEP-2000; 2000WO-JP06222.
XX
PR 30-SEP-1999; 99JP-0279307.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Hamada K, Nakakido F;
XX
DR WPI; 2001-266212/27.
XX
PT Method for producing male sterile rice and maize by inserting RNAse
PT gene and RNAse inhibitor genes with promoters into the plant genome -
XX
PS Claim 7; Page 24-25; 29pp; Japanese.

XX
CC The present invention relates to a method for producing male sterile
CC plants. The method comprises inserting a promoter fragment upstream of an
CC RNAse gene and a second promoter, upstream of an RNAse inhibitor protein
CC gene and inserting it into the plant genome. The method is useful for
CC producing male sterile tobacco, lettuce and rapeseed plants, but
CC preferably rice and maize. The present sequence is the E1 promoter from
CC rice, which was used in the method of the present invention.
XX
SQ Sequence 1695 BP; 503 A; 384 C; 357 G; 451 T; 0 other;

Query Match 100.0%; Score 1695; DB 22; Length 1695;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1695; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
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Db     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
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Db     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
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Db     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
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Db     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
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Db     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
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Db    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
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Db    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
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Db    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
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Db    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680

Qy    1681 CAAGCCGTCGCGATG 1695
          |||||||||||||||
Db    1681 CAAGCCGTCGCGATG 1695
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RESULT 2
AAF86440/c
ID AAF86440 standard; DNA; 2275 BP.
XX
AC AAF86440;
XX
DT 25-JUN-2001 (first entry)
XX
DE Oligonucleotide #1: SEQ ID 4.
XX
KW Male sterile plant; RNAase inhibitor; ds.
XX
OS Unidentified.
XX

PN WO200124616-A1.
XX
PD 12-APR-2001.
XX
PF 12-SEP-2000; 2000WO-JP06222.
XX
PR 30-SEP-1999; 99JP-0279307.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Hamada K, Nakakido F;
XX
DR WPI; 2001-266212/27.
XX
PT Method for producing male sterile rice and maize by inserting RNAse
PT gene and RNAse inhibitor genes with promoters into the plant genome -
XX
PS Disclosure; Page 17-19; 29pp; Japanese.
XX
CC The present invention relates to a method for producing male sterile
CC plants. The method comprises inserting a promoter fragment upstream of an
CC RNAse gene and a second promoter, upstream of an RNAse inhibitor protein
CC gene and inserting it into the plant genome. The method is useful for
CC producing male sterile tobacco, lettuce and rapeseed plants, but
CC preferably rice and maize. The present sequence is an oligonucleotide
CC used in the method of the present invention.
XX
SQ Sequence 2275 BP; 604 A; 496 C; 496 G; 679 T; 0 other;

Query Match 100.0%; Score 1695; DB 22; Length 2275;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1695; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
Db    2256 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 2197

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
Db    2196 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 2137

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
Db    2136 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 2077

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
Db    2076 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 2017

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
Db    2016 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 1957

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
Db    1956 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 1897

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
Db    1896 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 1837

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
Db    1836 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 1777

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
Db    1776 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 1717

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
Db    1716 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 1657

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
Db    1656 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 1597

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
Db    1596 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 1537

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
Db    1536 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 1477

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
Db    1476 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 1417

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
Db    1416 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 1357

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
Db    1356 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 1297

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
Db    1296 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1237

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
Db    1236 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1177

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
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Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
Db    1116 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1057

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
Db    1056 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 997

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
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Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
Db     936 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 877

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Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
Db     816 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 757

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
Db     756 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 697

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
Db     696 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 637

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
Db     636 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 577

Qy    1681 CAAGCCGTCGCGATG 1695
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          ||||||||||||||||
Db    576 CAAGCCGTCGCGATG 562


RESULT 3
AAV23239
ID   AAV23239 standard; DNA; 5349 BP.
XX
AC   AAV23239;
XX
DT   17-JUL-1998  (first entry)
XX
DE   T-DNA of pTTS24.
XX
KW   Barstar; barnase inhibitor; fertility restoration;
KW   male-sterile line; plasmid pTTS24; T-DNA; ds.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   misc_feature    complement (1..25)
FT                   /*tag= a
FT                   /label= RB
FT                   /note= "right boarder"
FT   3'UTR           complement (98..331)
FT                   /*tag= b
FT                   /label= 3'_g7
FT                   /note= "region containing 3' untranslated end of
FT                        Agrobacterium T-DNA gene 7"
FT   CDS             332..883
FT                   /*tag= c
FT                   /label= bar
FT                   /note= "region coding for phosphinothricin acetyl
FT                        transferase"
FT   promoter        complement (884..2258)
FT                   /*tag= d
FT                   /label= P35S
FT                   /note= "35S promoter of Cauliflower Mosaic Virus"
FT   promoter        2281..3969
FT                   /*tag= e
FT                   /label= PE1
FT                   /note= "promoter of E1 gene of rice (WO9213956)"
FT   CDS             3970..4245
FT                   /*tag= f
FT                   /product= improved_barstar
FT   CDS             4246..4577
FT                   /*tag= g
FT                   /label= 3'_chs
FT                   /note= "region containing 3' untranslated end of
FT                        chalcone synthase gene"
FT   misc_feature    complement (5325..5349)
FT                   /*tag= h
FT                   /note= "T-DNA left border"
XX
PN   WO9810081-A2.
XX
PD   12-MAR-1998.
XX
PF   01-SEP-1997;   97WO-EP04739.
XX
PR   03-SEP-1996;   96EP-0202446.
XX
PA   (PLBZ ) PLANT GENETIC SYSTEMS NV.
XX
PI   Michiels F,  Williams M;
XX
DR   WPI; 1998-193630/17.
XX
PT   DNA encoding an improved barstar protein - used to restore fertility
PT   in male-sterile plant lines
XX
PS   Example 4; Pages 41-43; 54pp; English.
XX
CC   The present sequence was used in the preparation of an improved
CC   Bacillus amyloliquefaciens barstar, i.e. barnase inhibitor, which
CC   can be used to restore fertility to male-sterile lines.
CC   The DNA sequence encoding the improved barstar, leads to increased
CC   barstar production in tapetum cells, due to improved translation,
CC   and possibly protein stability.
XX
SQ   Sequence 5349 BP; 1339 A; 1233 C; 1290 G; 1487 T; 0 other;

  Query Match             100.0%;  Score 1695;  DB 19;  Length 5349;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches 1695;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2278 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 2337

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2338 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 2397

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2398 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 2457

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2458 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 2517

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2518 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 2577

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2578 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 2637

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2638 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 2697

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2698 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 2757

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2758 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 2817

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2818 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 2877

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2878 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 2937

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2938 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 2997

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2998 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 3057

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3058 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 3117

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3118 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 3177
```

```
Qy    901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3178 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 3237

Qy    961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3238 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 3297

Qy   1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3298 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 3357

Qy   1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3358 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 3417

Qy   1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3418 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 3477

Qy   1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3478 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 3537

Qy   1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3538 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 3597

Qy   1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3598 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 3657

Qy   1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3658 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 3717

Qy   1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3718 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 3777

Qy   1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3778 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 3837

Qy   1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3838 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 3897

Qy   1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3898 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 3957

Qy   1681 CAAGCCGTCGCGATG 1695
          |||||||||||||||
Db   3958 CAAGCCGTCGCGATG 3972
```

RESULT 4
AAZ91097/c
ID AAZ91097 standard; DNA; 6539 BP.
XX
AC AAZ91097;
XX
DT 06-JUN-2000 (first entry)
XX
DE E. coli plasmid pTS431 containing mutant barnase gene.
XX
KW Male sterile plant; mutant barnase gene; anther-specific expression;
KW low fidelity PCR; primer; plant breeding; ss.
XX
OS Synthetic.
XX
PN WO200008176-A1.
XX
PD 17-FEB-2000.
XX
PF 03-AUG-1999; 99WO-JP04167.
XX
PR 04-AUG-1998; 98JP-0220060.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Hamada K, Nakakido F;
XX
DR WPI; 2000-195581/17.
XX
PT Mutate barnase gene for efficient construction of plant transformants,
PT particularly male sterile plants free from any undesirable characters
PT by specifically expressing the gene alone in anther -
XX
PS Example 3; Page 23-27; 30pp; Japanese.
XX
CC The invention relates to the generation of male sterile plants by
CC the introduction of a mutant barnase gene (AAZ91095) for expression
CC specifically in the anther of a plant. This sequence represents the
CC E. coli/Agrobacterium shuttle vector plasmid pTS172 which contains
CC the mutated barnase gene (AAZ91095) under control of the cauliflower
CC mosaic virus 35S promoter. The vector also contains a region of the
CC Agrobacterium T-DNA gene 7. The vector is used for transmitting the
CC barnase gene to plants via an Agrobacterium tumefaciens host cell.
CC The transformed plant is used in plant breeding.
XX
SQ Sequence 6539 BP; 1755 A; 1578 C; 1519 G; 1687 T; 0 other;

Query Match 100.0%; Score 1695; DB 21; Length 6539;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1695; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4307 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 4248

Qy     61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4247 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 4188

Qy    121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4187 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 4128

Qy    181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4127 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 4068

Qy    241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4067 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 4008

Qy    301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   4007 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 3948

Qy    361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3947 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 3888

Qy    421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3887 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 3828

Qy    481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3827 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 3768

Qy    541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

```
Db   3767 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 3708

Qy    601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3707 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 3648

Qy    661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3647 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 3588

Qy    721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3587 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 3528

Qy    781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3527 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 3468

Qy    841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3467 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 3408

Qy    901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3407 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 3348

Qy    961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3347 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 3288

Qy   1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3287 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 3228

Qy   1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3227 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 3168

Qy   1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3167 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 3108

Qy   1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3107 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 3048

Qy   1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3047 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 2988

Qy   1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2987 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 2928

Qy   1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2927 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 2868

Qy   1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2867 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 2808

Qy   1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2807 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 2748

Qy   1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2747 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 2688

Qy   1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   2687 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 2628

Qy   1681 CAAGCCGTCGCGATG 1695
          |||||||||||||||
Db   2627 CAAGCCGTCGCGATG 2613
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```
RESULT 5
AAT61394/c
ID   AAT61394 standard; DNA; 6548 BP.
XX
AC   AAT61394;
XX
DT   07-MAY-1997  (first entry)
XX
DE   Plasmid pTS172.
XX
KW   Transgenic plant; poly-(ADP-ribose) polymerase inhibitor; PARP;
KW   niacinamide; Agrobacterium; T-DNA; male sterile; barnase;
KW   ribonuclease; RNase; cereal; wheat; Triticum aestivum;
KW   plasmid pTS172; ds.
XX
OS   Chimeric Agrobacterium sp.;
OS   Chimeric Oryza sativa;
OS   Chimeric cauliflower mosaic virus.
XX
FH   Key             Location/Qualifiers
FT   3'UTR           complement (2019..2288)
FT                   /*tag= a
FT                   /label= 3'nos
FT                   /note= "3' untranslated region contg. the poly-A
FT                         signal of Agrobacterium T-DNA nopaline
FT                         synthase gene"
FT   CDS             complement (2289..2624)
FT                   /*tag= b
FT                   /product= barnase
FT   promoter        complement (2625..4313)
FT                   /*tag= c
FT                   /label= PE1
FT                   /note= "promoter region of rice E1 gene"
FT   promoter        complement (4336..5710)
FT                   /*tag= d
FT                   /label= P35S
FT                   /note= "35S promoter region of cauliflower mosaic
FT                         virus"
FT   CDS             5711..6262
FT                   /*tag= e
FT                   /label= Bar
FT                   /note= "phosphinothricin acetyltransferase"
FT   3'UTR           6243..6496
FT                   /*tag= f
FT                   /label= 3'g7
FT                   /note= "3' untranslated region contg. the poly-A
FT                         signal of gene 7 of Agrobacterium T-DNA"
XX
PN   EP757102-A1.
XX
PD   05-FEB-1997.
XX
PF   04-AUG-1995;   95EP-0401844.
XX
PR   04-AUG-1995;   95EP-0401844.
XX
PA   (PLBZ ) PLANT GENETIC SYSTEMS NV.
XX
PI   De Block M;
XX
DR   WPI; 1997-111050/11.
XX
PT   Prodn. of transgenic plants using a poly-(ADP-ribose) polymerase
PT   inhibitor - reduces the cultured cells response to stress and
PT   reduces metabolism
XX
PS   Example 2; Page 17-20; 25pp; English.
```

```
XX
CC   Plasmid pTS172 (AAT61394) contains the barnase coding sequence under
CC   control of the rice E1 gene stamen-specific promoter and a
CC   phosphinothricin acetyltransferase coding sequence under control of
CC   the CaMV 35S promoter.  Plasmid pTS172 and plasmid pTS772 (see also
CC   AAT61395) were used to transform wheat Spring variety Pavon calli via
CC   particle bombardment.  Some calli were treated with the poly-(ADP-
CC   ribose) polymerase inhibitor niacinamide before, or before and
CC   after, bombardment.  Healthy, male sterile plants were regenerated
CC   only from bombarded calli that were treated with niacinamide.  This
CC   was believed to be due to more faithful expression characteristics
CC   of the integrated stamen-selective batnase gene in these calli
CC   and regenerated shoots.  For plants transformed with pTS172,
CC   foreign DNA was stably incorporated in the wheat genome in 2-3
CC   copies.
XX
SQ   Sequence 6548 BP; 1756 A; 1579 C; 1523 G; 1690 T; 0 other;

  Query Match             100.0%;  Score 1695;  DB 18;  Length 6548;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches 1695;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4316 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 4257

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4256 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 4197

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4196 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 4137

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4136 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 4077

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4076 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 4017

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4016 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 3957

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3956 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 3897

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3896 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 3837

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3836 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 3777

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3776 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 3717

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3716 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 3657

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3656 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 3597

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3596 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 3537

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3536 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 3477

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3476 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 3417

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3416 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 3357

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3356 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 3297

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3296 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 3237

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3236 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 3177

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3176 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 3117

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3116 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 3057

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3056 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 2997

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2996 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 2937

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2936 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 2877

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2876 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 2817

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2816 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 2757

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2756 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 2697

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2696 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 2637

Qy    1681 CAAGCCGTCGCGATG 1695
          |||||||||||||||
Db    2636 CAAGCCGTCGCGATG 2622


RESULT 6
AAZ91096/c
ID   AAZ91096 standard; DNA; 6548 BP.
XX
AC   AAZ91096;
XX
DT   06-JUN-2000  (first entry)
```

XX
DE E. coli plasmid pTS172 containing synthetic barnase gene.
XX
KW Male sterile plant; mutant barnase gene; anther-specific expression;
KW low fidelity PCR; primer; plant breeding; ss.
XX
OS Synthetic.
XX
PN WO200008176-A1.
XX
PD 17-FEB-2000.
XX
PF 03-AUG-1999; 99WO-JP04167.
XX
PR 04-AUG-1998; 98JP-0220060.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Hamada K, Nakakido F;
XX
DR WPI; 2000-195581/17.
XX
PT Mutate barnase gene for efficient construction of plant transformants,
PT particularly male sterile plants free from any undesirable characters
PT by specifically expressing the gene alone in anther -
XX
PS Example 3; Page 19-23; 30pp; Japanese.
XX
CC The invention relates to the generation of male sterile plants by
CC the introduction of a mutant barnase gene (AAZ91095) for expression
CC specifically in the anther of a plant. This sequence represents the
CC E. coli/Agrobacterium shuttle vector plasmid pTS172 which contains
CC the synthetic barnase gene (AAZ91094) under control of the cauliflower
CC mosaic virus 35S promoter. The vector also contains a region of the
CC Agrobacterium T-DNA gene 7. The vector is used for transmitting the
CC barnase gene to plants via an Agrobacterium tumefaciens host cell.
CC The transformed plant is used in plant breeding.
XX
SQ Sequence 6548 BP; 1756 A; 1579 C; 1523 G; 1690 T; 0 other;

Query Match 100.0%; Score 1695; DB 21; Length 6548;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1695; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4316 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 4257

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4256 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 4197

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4196 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 4137

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4136 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 4077

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4076 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 4017

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4016 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 3957

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3956 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 3897

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3896 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 3837

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3836 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 3777

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3776 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 3717

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3716 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 3657

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3656 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 3597

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3596 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 3537

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3536 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 3477

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3476 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 3417

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3416 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 3357

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3356 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 3297

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3296 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 3237

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3236 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 3177

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3176 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 3117

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3116 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 3057

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3056 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 2997

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2996 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 2937

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2936 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 2877

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2876 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 2817

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db    2816 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 2757

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2756 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 2697

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2696 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 2637

Qy    1681 CAAGCCGTCGCGATG 1695
           |||||||||||||||
Db    2636 CAAGCCGTCGCGATG 2622
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RESULT 7
AAF86441/c
ID AAF86441 standard; DNA; 7492 BP.
XX
AC AAF86441;
XX
DT 25-JUN-2001 (first entry)
XX
DE Plasmid pTS346.
XX
KW Male sterile plant; RNAase inhibitor; plasmid pTS346; ds.
XX
OS Unidentified.
XX
PN WO200124616-A1.
XX
PD 12-APR-2001.
XX
PF 12-SEP-2000; 2000WO-JP06222.
XX
PR 30-SEP-1999; 99JP-0279307.
XX
PA (NISB) JAPAN TOBACCO INC.
XX
PI Hamada K, Nakakido F;
XX
DR WPI; 2001-266212/27.
XX
PT Method for producing male sterile rice and maize by inserting RNAse
PT gene and RNAse inhibitor genes with promoters into the plant genome -
XX
PS Disclosure; Page 19-23; 29pp; Japanese.
XX
CC The present invention relates to a method for producing male sterile
CC plants. The method comprises inserting a promoter fragment upstream of an
CC RNAse gene and a second promoter, upstream of an RNAse inhibitor protein
CC gene and inserting it into the plant genome. The method is useful for
CC producing male sterile tobacco, lettuce and rapeseed plants, but
CC preferably rice and maize. The present sequence is a vector used in
CC the method of the present invention.
XX
SQ Sequence 7492 BP; 1987 A; 1801 C; 1752 G; 1952 T; 0 other;

Query Match 100.0%; Score 1695; DB 22; Length 7492;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1695; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5242 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 5183

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5182 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 5123

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5122 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 5063

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5062 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 5003

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    5002 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 4943

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4942 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 4883

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4882 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 4823

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4822 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 4763

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4762 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 4703

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4702 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 4643

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4642 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 4583

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4582 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 4523

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4522 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 4463

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4462 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 4403

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4402 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 4343

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4342 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 4283

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4282 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 4223

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4222 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 4163

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4162 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 4103

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4102 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 4043

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4042 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 3983
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Qy   1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3982 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 3923

Qy   1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3922 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 3863

Qy   1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3862 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 3803

Qy   1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3802 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 3743

Qy   1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3742 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 3683

Qy   1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3682 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 3623

Qy   1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   3622 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 3563

Qy   1681 CAAGCCGTCGCGATG 1695
          |||||||||||||||
Db   3562 CAAGCCGTCGCGATG 3548
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RESULT 8
AAQ27488
ID AAQ27488 standard; DNA; 2407 BP.
XX
AC AAQ27488;
XX
DT 10-FEB-1993 (first entry)
XX
DE GE1 promoter and 5' gene portion.
XX
KW Immature; spikelet; microsporocyte; meiosis; anther; probe; leaf;
KW expression cassette; root; stamen; fertile pollen; ss.
XX
OS Oryza sativa.
XX

FH	Key	Location/Qualifiers
FT	promoter	1..2263
FT		/*tag= a
FT		/label= PE1_promoter_region
FT	TATA_signal	2181..2187
FT		/*tag= b
FT	misc_signal	2211
FT		/*tag= c
FT		/label= Transcription_initiation_site
FT	CDS	2264..2407
FT		/*tag= d
FT		/label= E1_gene_5'_region

XX
PN WO9213956-A.
XX
PD 20-AUG-1992.
XX
PF 06-FEB-1992; 92WO-EP00274.
XX
PR 08-FEB-1991; 91EP-0400318.
PR 27-SEP-1991; 91EP-0402590.
PR 10-DEC-1991; 91EP-0403352.
XX
PA (PLBZ) PLANT GENETIC SYSTEMS NV.
XX
PI Komari T, Michiels F, Morioka S, Scheirlinck T;
XX
DR WPI; 1992-300042/36.
XX
PT Stamen-specific plant promoters - for producing male-sterile or
PT male-fertility-restored monocotyledons, e.g. rice
XX
PS Disclosure; Page 47-48; 58pp; English.
XX
CC The sequences given in AAQ27486-88 are the promoter regions of stamen-
CC specific rice genes. These genes were isolated by using male flower-
CC specific cDNA's as probes (see AAQ27481-5). The gene sequences isolated
CC can be used for producing transgenic male-sterile monocots. These
CC promoters can be used to form expression cassettes which can be
CC used to provide gene expression predominantly in the stamen cells
CC of a plant, and do not provide gene expression in the other parts of
CC the plant that are not involved in the production of fertile pollen.
XX
SQ Sequence 2407 BP; 662 A; 543 C; 507 G; 695 T; 0 other;

Query Match 99.9%; Score 1693.4; DB 13; Length 2407;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1694; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy      1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
          || ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    572 CCTCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 631

Qy     61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    632 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 691

Qy    121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    692 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 751

Qy    181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    752 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 811

Qy    241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    812 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 871

Qy    301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    872 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 931

Qy    361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    932 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 991

Qy    421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    992 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 1051

Qy    481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1052 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 1111

Qy    541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1112 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 1171

Qy    601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1172 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 1231

Qy    661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db   1232 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 1291

Qy    721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
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                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1292 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 1351

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1352 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 1411

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1412 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 1471

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1472 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 1531

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1532 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1591

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1592 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1651

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1652 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1711

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1712 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1771

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1772 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1831

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1832 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1891

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1892 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1951

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1952 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 2011

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2012 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 2071

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2072 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 2131

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2132 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 2191

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
                  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2192 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 2251

Qy    1681 CAAGCCGTCGCGATG 1695
                  |||||||||||||||
Db    2252 CAAGCCGTCGCGATG 2266


RESULT 9
AAQ53881
ID   AAQ53881 standard; DNA; 2407 BP.
XX
AC   AAQ53881;
XX
DT   27-JUN-1994  (first entry)
XX
DE   Sequence comprising anther specific promoter of PE1 of rice.
XX
KW   Maintainer gene; sterile; sterility; homogenous population; hybrid;
KW   seed; fertility restorer gene; pollen lethality gene; Oryza sativa;
KW   ds.
XX
OS   Oryza sativa.
XX
FH   Key             Location/Qualifiers
FT   misc_feature    1..2263
FT                   /*tag= a
FT                   /label= PE1.
FT                   /note= "Sequence comprising anther specific
FT                   promoter PE1."
FT   TATA_signal     2181..2187
FT                   /*tag= b
FT   misc_feature    2211
FT                   /*tag= c
FT                   /note= "Transcription initiation site determined by
FT                   primer extension."
FT   misc_feature    2264..2266
FT                   /*tag= d
FT                   /note= "ATG translation start site."
XX
PN   WO9325695-A.
XX
PD   23-DEC-1993.
XX
PF   11-JUN-1993;   93WO-EP01489.
XX
PR   12-JUN-1992;   92US-0899072.
PR   03-NOV-1992;   92US-0970840.
XX
PA   (PLBZ ) PLANT GENETIC SYSTEMS NV.
XX
PI   Leemans J,  Williams M;
XX
DR   WPI; 1994-007552/01.
XX
PT   Maintainer gene for maintenance of male-sterile plants -
PT   comprises fertility-restorer gene and pollen-lethality gene
XX
PS   Disclosure; Page 65-66; 87pp; English.
XX
CC   A maintainer gene of plants, pref. a foreign chimeric gene,
CC   comprises (a) a ferility restorer gene which comprises a fertility
CC   restorer DNA and (ii) a restorer promoter capable of
CC   directing the expression of the fertility restorer DNA and (b) a
CC   pollen lethality gene that is selectively expressed in microspores
CC   and/or pollen of the plant to prevent the production of functional
CC   pollen and which comprises (i) a pollen lethality DNA and (ii) a
CC   pollen specific promoter capable of directing expression of the
CC   pollen lethality DNA.  Plants transformed with this DNA (maintainer
CC   plants) can be used to maintian a homogenous population of male
CC   sterile plants for the production of hybrid seed.  The PE1
CC   promoter is an anther specific, male sterility promoter and is used
CC   in the construction of a plant transformation vector comprising a
CC   maintainer gene as described which can be used to transform rice
CC   and other plants.
XX
SQ   Sequence 2407 BP; 662 A; 543 C; 507 G; 695 T; 0 other;

  Query Match             99.9%;  Score 1693.4;  DB 15;  Length 2407;
  Best Local Similarity   99.9%;  Pred. No. 0;
  Matches 1694;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
           || ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     572 CCTCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 631
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Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     632 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 691

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     692 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 751

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     752 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 811

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     812 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 871

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     872 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 931

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     932 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 991

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     992 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 1051

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1052 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 1111

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1112 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 1171

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1172 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 1231

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1232 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 1291

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1292 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 1351

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1352 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 1411

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1412 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 1471

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1472 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 1531

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1532 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1591

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1592 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1651

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1652 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1711

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1712 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1771

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1772 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1831

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1832 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1891

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1892 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1951

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1952 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 2011

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2012 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 2071

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2072 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 2131

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2132 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 2191

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2192 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 2251

Qy    1681 CAAGCCGTCGCGATG 1695
           |||||||||||||||
Db    2252 CAAGCCGTCGCGATG 2266
```

RESULT 10
AAT39336/c
ID AAT39336 standard; DNA; 6548 BP.
XX
AC AAT39336;
XX
DT 22-JAN-1997 (first entry)
XX
DE Plasmid pTS174 used to obtain male sterile rice.
XX
KW Plasmid pTS174; male sterile; barnase; ribonuclease; transgenic plant;
KW rice; Oryza sativa; ds; cyclic.
XX
OS Synthetic.
XX

FH	Key	Location/Qualifiers
FT	misc_feature	1..2003
FT		/*tag= a
FT		/label= Vector
FT		/note= "pUC19 derived vector sequences"
FT	polyA_signal	complement (2019..2283)
FT		/*tag= b
FT		/label= 3'nos
FT		/note= "region containing polyadenylation signal nopaline synthase gene of Agrobacterium T-DNA"
FT	CDS	complement (2284..2624)
FT		/*tag= c
FT		/label= Barnase
FT		/product= Bacillus amyloliquefaciens barnase
FT	promoter	complement (2625..4313)
FT		/*tag= d
FT		/label= PE1

```
FT                   /function= promoter of the stamen-specific E1 gene
FT                            of rice
FT   promoter        4336..5710
FT                   /*tag= e
FT                   /label= P35S
FT                   /function= 35S promoter of cauliflower mosaic virus
FT   CDS             5711..6262
FT                   /*tag= f
FT                   /label= bar
FT                   /product= phosphinothricin acetyltransferase
FT   polyA_signal    6263..6496
FT                   /*tag= g
FT                   /label= 3'g7
FT                   /function= region containing polyadenylation signal
XX
PN   WO9626283-A1.
XX
PD   29-AUG-1996.
XX
PF   21-FEB-1996;   96WO-EP00722.
XX
PR   21-FEB-1995;   95EP-0400364.
XX
PA   (PLBZ ) PLANT GENETIC SYSTEMS NV.
XX
PI   Botterman J, Cornelissen M, Michiels F;
XX
DR   WPI; 1996-402373/40.
XX
PT   Prodn. of male sterile plants by transforming with a chimaeric
PT   construct - comprising a male sterility DNA e.g. barnase and a
PT   co-regulating gene, e.g. barstar, into the nuclear genome, useful
PT   for generating hybrid cultivars
XX
PS   Example 1; Page 33-37; 56pp; English.
XX
CC   Plasmid pTS174 (AAT39336) contains Bacillus barnase DNA under control
CC   of the stamen-specific PE1 promoter. Embryogenic callus from rice
CC   cv. Kochihibiki was transformed with pTS174 alone or with pTS88
CC   (see also AAT39337), a plasmid contg. barstar DNA under control of a
CC   35S promoter. With pTS174 alone, 1 male sterile line was recovered
CC   from 48 electroporation cuvettes. With both plasmids, 7 normal
CC   male sterile lines were recovered from 40 cuvettes. Barnase
CC   expression disturbed the function of stamen cells leading to male
CC   sterility. Constitutive expression of barstar counteracted any low
CC   level expression of barnase in non-stamen tissue.
XX
SQ   Sequence 6548 BP; 1757 A; 1578 C; 1523 G; 1690 T; 0 other;
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Query Match 99.9%; Score 1693.4; DB 17; Length 6548;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1694; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
Db    4316 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 4257

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
Db    4256 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 4197

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
Db    4196 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 4137

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
Db    4136 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 4077

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
Db    4076 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 4017

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
Db    4016 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 3957

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
Db    3956 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 3897

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
Db    3896 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 3837

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
Db    3836 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 3777

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
Db    3776 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 3717

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
Db    3716 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 3657

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
Db    3656 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 3597

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
Db    3596 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 3537

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
Db    3536 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 3477

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
Db    3476 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 3417

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
Db    3416 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 3357

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
Db    3356 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 3297

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
Db    3296 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 3237

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
Db    3236 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 3177

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
Db    3176 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 3117

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
Db    3116 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 3057

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
Db    3056 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 2997

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
Db    2996 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 2937

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
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          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2936 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 2877

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2876 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 2817

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2816 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 2757

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2756 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 2697

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2696 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 2637

Qy    1681 CAAGCCGTCGCGATG 1695
          ||||||||| |||||
Db    2636 CAAGCCGTCTCGATG 2622


RESULT 11
AAD03878
ID   AAD03878 standard; DNA; 6667 BP.
XX
AC   AAD03878;
XX
DT   02-JUL-2001  (first entry)
XX
DE   NotI fragment of plasmid pADP73 comprising deacetylase coding sequence.
XX
KW   Deacetylase; hybrid seed; wheat; stamen selective promoter; maize; pea;
KW   male-sterile cereal crop; chimeric; acetylated toxin; plasmid pADP73;
KW   N-acetyl phosphinothricin; N-acetyl PPT; E1 promoter; NotI fragment;
KW   Cauliflower mosaic virus; CaMV; rice; ds.
XX
OS   Chimeric - Stenotrophomonas sp.
OS   Chimeric - Zea mays.
OS   Chimeric - Agrobacterium tumefaciens.
OS   Chimeric - Cauliflower mosaic virus.
OS   Chimeric - Pisum sativum.
OS   Chimeric - Unidentified.
OS   Chimeric - Oryza sativa.
XX
FH   Key             Location/Qualifiers
FT   misc_feature    12..35
FT                   /*tag= a
FT                   /note= "Left T-DNA border from pTIT37 of A. tumefaciens
FT                   (counterclockwise)"
FT   misc_feature    77..130
FT                   /*tag= b
FT                   /note= "Target sequence for frt/flp excision system"
FT   promoter        157..1061
FT                   /*tag= c
FT                   /label= Ubiquitin_promoter
FT                   /note= "Derived from maize"
FT   exon            1062..1142
FT                   /*tag= d
FT                   /number= 1
FT                   /note= "Exon of ubi gene"
FT   intron          1143..2152
FT                   /*tag= e
FT                   /number= 1
FT                   /note= "Intron of ubi gene"
FT   5'UTR           2174..2240
FT                   /*tag= f
FT                   /note= "5' untranslated leader sequence from pea
FT                   cab22 gene"
FT   CDS             2242..2853
FT                   /*tag= g
FT                   /product= "Gentamycin acetyltransferase"
FT   3'UTR           2856..3090
FT                   /*tag= h
FT                   /note= "Derived from CaMV 35S transcript"
FT   misc_feature    3123..3176
FT                   /*tag= i
FT                   /note= "Target sequence for frt/flp excision system"
FT   promoter        3237..4923
FT                   /*tag= j
FT                   /label= PE1_promoter
FT                   /note= "Derived from rice"
FT   CDS             4938..6257
FT                   /*tag= k
FT                   /product= "Stenotrophomonas sp. deacetylase (AAE00587)"
FT   3'UTR           6325..6520
FT                   /*tag= l
FT                   /note= "Derived from CaMV 35S transcript"
FT   misc_feature    6571..6548
FT                   /*tag= m
FT                   /note= "Right T-DNA border from pTIT37 of A. tumefaciens
FT                   (counterclockwise)"
XX
PN   WO200129237-A2.
XX
PD   26-APR-2001.
XX
PF   13-OCT-2000; 2000WO-EP10281.
XX
PR   15-OCT-1999;   99US-0418817.
XX
PA   (AVET ) AVENTIS CROPSCIENCE NV.
XX
PI   Quandt J,  Bartsch K,  Knittel N;
XX
DR   WPI; 2001-290923/30.
DR   P-PSDB; AAE00587.
XX
PT   Producing conditionally male-sterile wheat plants by introducing into
PT   genome of wheat cell or tissue foreign DNA having DNA molecule encoding
PT   deacetylase under control of stamen selective promoter, regenerating
PT   plants -
XX
PS   Example 2; Page 49-51; 58pp; English.
XX
CC   The invention relates to a method for producing male-sterile wheat
CC   plants by transforming the wheat plant cell or tissue with chimeric gene
CC   comprising DNA molecule encoding deacetylase from Stenotrophomonas sp.
CC   deposit number DSM 9734 and a stamen selective promoter like CA55, T72
CC   or E1. The wheat plant is regenerated from cell or tissue and acetylated
CC   toxin (N-acetyl phosphinothricin referred as N-acetyl PPT) is applied to
CC   the wheat plant to make it male sterile. The method is useful
CC   for producing conditionally male-sterile cereal crops such as barley,
CC   rye, oats and most particularly wheat. The conditionally male-sterile
CC   plants can be used in wheat breeding to produce composite hybrid wheat
CC   seed or pure hybrid wheat seed.
CC   The present sequence is a NotI fragment of plasmid pADP73 containing
CC   a marker gene cassette and deac (deacetylase) gene expression cassette.
CC   The marker gene cassette comprises Ubiquitin promoter from maize
CC   containing its first exon and first intron, linked to the 5' untranslated
CC   leader sequence of the cab22 gene from pea, operably linked to the
CC   gentamycin acetyltransferase (GAT) coding sequence and the 3'
CC   untranslated (UTR) sequence from the cauliflower mosaic virus (CaMV) 35S
CC   transcript. The whole marker gene cassette is flanked by frt1/frt2
CC   sequences as part of the flp/frt excision system. The NotI fragment also
CC   contains a deac gene expression cassette comprising the tapetum-specific
CC   promoter E1 from rice operably linked to the deac coding sequence and
CC   the 3' UTR from the CaMV 35S transcript. The complete insert is flanked
CC   by left and right T-DNA border sequences from Ti-plasmid pTIT37 of
CC   Agrobacterium tumefaciens.
XX
SQ   Sequence 6667 BP; 1644 A; 1675 C; 1612 G; 1736 T; 0 other;

  Query Match           99.7%;  Score 1690.4;  DB 22;  Length 6667;
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  Best Local Similarity   99.9%;  Pred. No. 0;
  Matches 1691;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3234 CCGCAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACC 3293

Qy      61 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3294 AATATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGA 3353

Qy     121 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3354 TCCAACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTG 3413

Qy     181 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3414 AACAACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCT 3473

Qy     241 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3474 GATGCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAAT 3533

Qy     301 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3534 GTTGGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGAT 3593

Qy     361 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3594 TATTATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAG 3653

Qy     421 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3654 ATACAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAG 3713

Qy     481 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 540
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3714 AGATGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTT 3773

Qy     541 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 600
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3774 TTAGTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTC 3833

Qy     601 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 660
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3834 TACCATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAA 3893

Qy     661 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 720
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3894 ATGAAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTAT 3953

Qy     721 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 780
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    3954 TCTACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAG 4013

Qy     781 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 840
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4014 TTCCTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAA 4073

Qy     841 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 900
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4074 ACCACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGA 4133

Qy     901 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 960
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4134 AAGCGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCC 4193

Qy     961 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 1020
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4194 CATGAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCA 4253

Qy    1021 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 1080
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4254 TAGCTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCG 4313

Qy    1081 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 1140
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4314 ATCTGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGG 4373

Qy    1141 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 1200
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4374 AGCCTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAAC 4433

Qy    1201 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 1260
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4434 AAACGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGAC 4493

Qy    1261 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 1320
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4494 CAAGAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAAT 4553

Qy    1321 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 1380
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4554 ATGTTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAAC 4613

Qy    1381 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 1440
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4614 CACGTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAG 4673

Qy    1441 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 1500
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4674 AATGCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGAC 4733

Qy    1501 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 1560
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4734 GGTGGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCAC 4793

Qy    1561 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 1620
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4794 GCTTGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCA 4853

Qy    1621 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 1680
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    4854 CACACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCAT 4913

Qy    1681 CAAGCCGTCGCG 1692
           |||||||||| |
Db    4914 CAAGCCGTCGGG 4925
```

RESULT 12
AAD03888
ID AAD03888 standard; DNA; 1687 BP.
XX
AC AAD03888;
XX
DT 02-JUL-2001 (first entry)
XX
DE E1 promoter from rice.
XX
KW Deacetylase; hybrid seed; wheat; stamen selective promoter; E1 promoter;
KW male-sterile cereal crop; acetylated toxin; N-acetyl phosphinothricin;
KW N-acetyl PPT; rice; ds.
XX
OS Oryza sativa.
XX
PN WO200129237-A2.
XX
PD 26-APR-2001.
XX
PF 13-OCT-2000; 2000WO-EP10281.
XX
PR 15-OCT-1999; 99US-0418817.
XX
PA (AVET) AVENTIS CROPSCIENCE NV.
XX

PI Quandt J, Bartsch K, Knittel N;
XX
DR WPI; 2001-290923/30.
XX
PT Producing conditionally male-sterile wheat plants by introducing into
PT genome of wheat cell or tissue foreign DNA having DNA molecule encoding
PT deacetylase under control of stamen selective promoter, regenerating
PT plants -
XX
PS Claim 8; Page 58; 58pp; English.
XX
CC The invention relates to a method for producing male-sterile wheat
CC plants by transforming the wheat plant cell or tissue with chimeric gene
CC comprising DNA molecule encoding deacetylase from Stenotrophomonas sp.
CC deposit number DSM 9734 and a stamen selective promoter like CA55, T72
CC or E1. The wheat plant is regenerated from cell or tissue and acetylated
CC toxin (N-acetyl phosphinothricin referred as N-acetyl PPT) is applied to
CC the wheat plant to make it male sterile. The method is useful
CC for producing conditionally male-sterile cereal crops such as barley,
CC rye, oats and most particularly wheat. The conditionally male-sterile
CC plants can be used in wheat breeding to produce composite hybrid wheat
CC seed or pure hybrid wheat seed.
CC The present sequence is stamen selective promoter E1 promoter from
CC rice.
CC Note: The present sequence is described as a chimeric gene comprising
CC deacetylase coding sequence and E1 promoter sequence throughout the
CC specification. However, the sequence contains only the E1 promoter.
XX
SQ Sequence 1687 BP; 502 A; 381 C; 354 G; 450 T; 0 other;

Query Match 99.5%; Score 1687; DB 22; Length 1687;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1687; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       4 CAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACCAAT 63
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 CAGATCCTTCTGTGTGATTGTTTTATTAAAATTTAATATTTATCTGGAATACCTACCAAT 60

Qy      64 ATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGATCC 123
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 ATATAGTAGACTTGTCAAGCTGCAAGAACTTCCAATCGCCGACAATACCAATAGAGATCC 120

Qy     124 AACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTGAAC 183
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 AACCACCTTAATATCATAAACAATCTGATTGTTAGTCCAGAACTATATTGAGTAGTGAAC 180

Qy     184 AACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCTGAT 243
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 AACAATAGCACATTAACATTATGAGGATTATTGGCTAACTCTGCAATTCAATATTCTGAT 240

Qy     244 GCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAATGTT 303
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 GCGTCTAATCTGGTCAATTTTAGCGCTCCAGAAAGAATTGCACAATCCTTGGACAATGTT 300

Qy     304 GGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGATTAT 363
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 GGCACTGGAACTGTTGCATGTTTTTACATCTCTTATTAACGTAGCAAAGGAGTAGATTAT 360

Qy     364 TATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAGATA 423
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     361 TATGTACCAGGAGAAATCTCTTCAGATCCTTTCCACATGCAATGTCGTAAAGAACAGATA 420

Qy     424 CAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAGAGA 483
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     421 CAGTGTACGTTAGTTTGTAATGGACGGTCAATGCCATTTCTCTGAAGGCATGTTCAGAGA 480

Qy     484 TGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTTTTA 543
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     481 TGATGATTTCTGGGATCCTTGGAGGGGCCCTGAAATTCGGAAACAGTTAGTTGAGTTTTA 540

Qy     544 GTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTCTAC 603
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     541 GTACCTAATGTCTTGCGTTATACTACGTGAAATGCCATTTCTGTAAGCTGAGTTTTCTAC 600

Qy     604 CATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAAATG 663
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     601 CATCTCCACAGGAAATAAAGCTAATACCTGTCCAAGAGTGGTGCGGCATTTGACCAAATG 660

Qy     664 AAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTATTCT 723
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     661 AAGATCACAAGCATGGCAAGAATGGCAATCTGGCAAAGGAGCGGAATTATATTGTATTCT 720

Qy     724 ACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAGTTC 783
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     721 ACTACATCGAACAGGAACCATATCAATGTTGCCCCAGCAAGGACCCCCGCAGATAAGTTC 780

Qy     784 CTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAAACC 843
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     781 CTGTTCTTCCACAGCAGAATATCCGCAACTGCATAGCTCCCAACAATGAAATCCAAAACC 840

Qy     844 ACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGAAAG 903
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     841 ACATCGGCTCAGAGAGAAGTTATGATAAAAGGCACTAATTCTGAATAATTTCCTAGAAAG 900

Qy     904 CGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCCCAT 963
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     901 CGAATAATAATAGCACACCTTGACCTCCACCAAGAAGCTTGTGGATCGACTTGTGCCCAT 960

Qy     964 GAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCATAG 1023
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     961 GAAATGGCATTCTGACATTCTGGTCACTGTCAGAATCTCTCGGAAAATGAGGAGGCATAG 1020

Qy    1024 CTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCGATC 1083
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1021 CTTCGTGTGTGTATGTGTGTGGGATATTACGCTGCTAAAACTTTGTGTTTCTGATCGATC 1080

Qy    1084 TGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGGAGC 1143
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1081 TGGTTAGAGAGCATCGTCTTTATAAGCACTTAAAAATGGTAGTATAATCTCTCAAGGAGC 1140

Qy    1144 CTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAACAAA 1203
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1141 CTATACTGCCAAGGAAAGGATAGCTTGGCCTGTGGGGATTGAGCCGTTGAAGGGAACAAA 1200

Qy    1204 CGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGACCAA 1263
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1201 CGAATACAGTTACCTTACCAGATGTTTGCCACGACATGGGCAACGTCATTGCTAGACCAA 1260

Qy    1264 GAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAATATG 1323
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1261 GAAGGCAAGAAGCAAAGTTTAGCTGTCAAAAAAGATATGCTAGAGGCTTTCCAGAATATG 1320

Qy    1324 TTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAACCAC 1383
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1321 TTCTATCTCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAACCAC 1380

Qy    1384 GTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAGAAT 1443
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1381 GTAAAAGTCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAGAAT 1440

Qy    1444 GCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGACGGT 1503
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1441 GCACCTAATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGACGGT 1500

Qy    1504 GGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCACGCT 1563
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1501 GGACGCGTGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCACGCT 1560

Qy    1564 TGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCACAC 1623
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1561 TGCACCGTGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCACAC 1620

Qy    1624 ACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCATCAA 1683
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    1621 ACGCACGCCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCATCAA 1680
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Qy    1684 GCCGTCG 1690
           |||||||
Db    1681 GCCGTCG 1687


RESULT 13
AAF86443
ID   AAF86443 standard; DNA; 365 BP.
XX
AC   AAF86443;
XX
DT   25-JUN-2001  (first entry)
XX
DE   Deleted E1 promoter.
XX
KW   Male sterile plant; RNAase inhibitor; E1 promoter; ds.
XX
OS   Synthetic.
XX
PN   WO200124616-A1.
XX
PD   12-APR-2001.
XX
PF   12-SEP-2000; 2000WO-JP06222.
XX
PR   30-SEP-1999;   99JP-0279307.
XX
PA   (NISB ) JAPAN TOBACCO INC.
XX
PI   Hamada K,  Nakakido F;
XX
DR   WPI; 2001-266212/27.
XX
PT   Method for producing male sterile rice and maize by inserting RNAse
PT   gene and RNAse inhibitor genes with promoters into the plant genome -
XX
PS   Claim 8; Page 25; 29pp; Japanese.
XX
CC   The present invention relates to a method for producing male sterile
CC   plants. The method comprises inserting a promoter fragment upstream of an
CC   RNAse gene and a second promoter, upstream of an RNAse inhibitor protein
CC   gene and inserting it into the plant genome. The method is useful for
CC   producing male sterile tobacco, lettuce and rapeseed plants, but
CC   preferably rice and maize. The present sequence is a deleted E1 promoter,
CC   which was used in the method of the present invention.
XX
SQ   Sequence 365 BP; 86 A; 119 C; 82 G; 78 T; 0 other;

  Query Match             21.5%;  Score 365;  DB 22;  Length 365;
  Best Local Similarity   100.0%;  Pred. No. 1e-102;
  Matches  365;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    1331 TCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAACCACGTAAAAG 1390
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 TCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAACCACGTAAAAG 60

Qy    1391 TCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAGAATGCACCTA 1450
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 TCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAGAATGCACCTA 120

Qy    1451 ATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGACGGTGGACGCG 1510
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 ATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGACGGTGGACGCG 180

Qy    1511 TGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCACGCTTGCACCG 1570
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 TGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCACGCTTGCACCG 240

Qy    1571 TGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCACACACGCACG 1630
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 TGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCACACACGCACG 300

Qy    1631 CCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCATCAAGCCGTCG 1690
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 CCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCATCAAGCCGTCG 360

Qy    1691 CGATG 1695
           |||||
Db     361 CGATG 365


RESULT 14
AAF86439/c
ID   AAF86439 standard; DNA; 5228 BP.
XX
AC   AAF86439;
XX
DT   25-JUN-2001  (first entry)
XX
DE   Plasmid pTS172delta.
XX
KW   Male sterile plant; RNAase inhibitor; plasmid pTS172delta; ds.
XX
OS   Unidentified.
XX
PN   WO200124616-A1.
XX
PD   12-APR-2001.
XX
PF   12-SEP-2000; 2000WO-JP06222.
XX
PR   30-SEP-1999;   99JP-0279307.
XX
PA   (NISB ) JAPAN TOBACCO INC.
XX
PI   Hamada K,  Nakakido F;
XX
DR   WPI; 2001-266212/27.
XX
PT   Method for producing male sterile rice and maize by inserting RNAse
PT   gene and RNAse inhibitor genes with promoters into the plant genome -
XX
PS   Disclosure; Page 14-17; 29pp; Japanese.
XX
CC   The present invention relates to a method for producing male sterile
CC   plants. The method comprises inserting a promoter fragment upstream of an
CC   RNAse gene and a second promoter, upstream of an RNAse inhibitor protein
CC   gene and inserting it into the plant genome. The method is useful for
CC   producing male sterile tobacco, lettuce and rapeseed plants, but
CC   preferably rice and maize. The present sequence is a vector used in
CC   the method of the present invention.
XX
SQ   Sequence 5228 BP; 1384 A; 1307 C; 1263 G; 1274 T; 0 other;

  Query Match             21.5%;  Score 365;  DB 22;  Length 5228;
  Best Local Similarity   100.0%;  Pred. No. 4.9e-102;
  Matches  365;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy    1331 TCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAACCACGTAAAAG 1390
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2986 TCAGCCAGACCAATGGGGGCAAAATTTACTACTATTTGCCATACATTAACCACGTAAAAG 2927

Qy    1391 TCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAGAATGCACCTA 1450
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2926 TCCTACACTCAACCTAACTGTTGAACGGTCCTGTTCTGGCCAACGGTGAGAATGCACCTA 2867

Qy    1451 ATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGACGGTGGACGCG 1510
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2866 ATGGACGGGACAACACTTCTTTCACCGTGCTACTGCTACATCCTGTAGACGGTGGACGCG 2807

Qy    1511 TGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCACGCTTGCACCG 1570
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2806 TGAGGTGCTTTCGCCATGACCGTCCTTGGTTGTTGCAGTCACTTGCGCACGCTTGCACCG 2747

Qy    1571 TGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCACACACGCACG 1630
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db    2746 TGACTCACCTGCCACATTGCCCCCGCCGTCGCCGGCGCCTACAAAAGCCACACACGCACG 2687

Qy    1631 CCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCATCAAGCCGTCG 1690
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    2686 CCGGCCACGATAACCCATCCTAGCATCCCGGTGTCCAGCAAGAGATCCATCAAGCCGTCG 2627

Qy    1691 CGATG 1695
           |||||
Db    2626 CGATG 2622


RESULT 15
AAC37958/c
ID   AAC37958 standard; DNA; 1039 BP.
XX
AC   AAC37958;
XX
DT   17-OCT-2000  (first entry)
XX
DE   Arabidopsis thaliana DNA fragment SEQ ID NO: 19277.
XX
KW   Hybridisation assay; genetic mapping; gene expression control;
KW   protein identification; signal transduction pathway;
KW   metabolic pathway; promoter; termination sequence; ss.
XX
OS   Arabidopsis thaliana.
XX
PN   EP1033405-A2.
XX
PD   06-SEP-2000.
XX
PF   25-FEB-2000; 2000EP-0301439.
XX
PR   25-FEB-1999;   99US-0121825.
PR   05-MAR-1999;   99US-0123180.
PR   09-MAR-1999;   99US-0123548.
PR   23-MAR-1999;   99US-0125788.
PR   25-MAR-1999;   99US-0126264.
PR   29-MAR-1999;   99US-0126785.
PR   01-APR-1999;   99US-0127462.
PR   06-APR-1999;   99US-0128234.
PR   08-APR-1999;   99US-0128714.
PR   16-APR-1999;   99US-0129845.
PR   19-APR-1999;   99US-0130077.
PR   21-APR-1999;   99US-0130449.
PR   23-APR-1999;   99US-0130510.
PR   23-APR-1999;   99US-0130891.
PR   28-APR-1999;   99US-0131449.
PR   30-APR-1999;   99US-0132048.
PR   30-APR-1999;   99US-0132407.
PR   04-MAY-1999;   99US-0132484.
PR   05-MAY-1999;   99US-0132485.
PR   06-MAY-1999;   99US-0132486.
PR   06-MAY-1999;   99US-0132487.
PR   07-MAY-1999;   99US-0132863.
PR   11-MAY-1999;   99US-0134256.
PR   14-MAY-1999;   99US-0134218.
PR   14-MAY-1999;   99US-0134219.
PR   14-MAY-1999;   99US-0134221.
PR   14-MAY-1999;   99US-0134370.
PR   18-MAY-1999;   99US-0134768.
PR   19-MAY-1999;   99US-0134941.
PR   20-MAY-1999;   99US-0135124.
PR   21-MAY-1999;   99US-0135353.
PR   24-MAY-1999;   99US-0135629.
PR   25-MAY-1999;   99US-0136021.
PR   27-MAY-1999;   99US-0136392.
PR   28-MAY-1999;   99US-0136782.
PR   01-JUN-1999;   99US-0137222.
PR   03-JUN-1999;   99US-0137528.
PR   04-JUN-1999;   99US-0137502.
PR   07-JUN-1999;   99US-0137724.
PR   08-JUN-1999;   99US-0138094.
PR   10-JUN-1999;   99US-0138540.
PR   10-JUN-1999;   99US-0138847.
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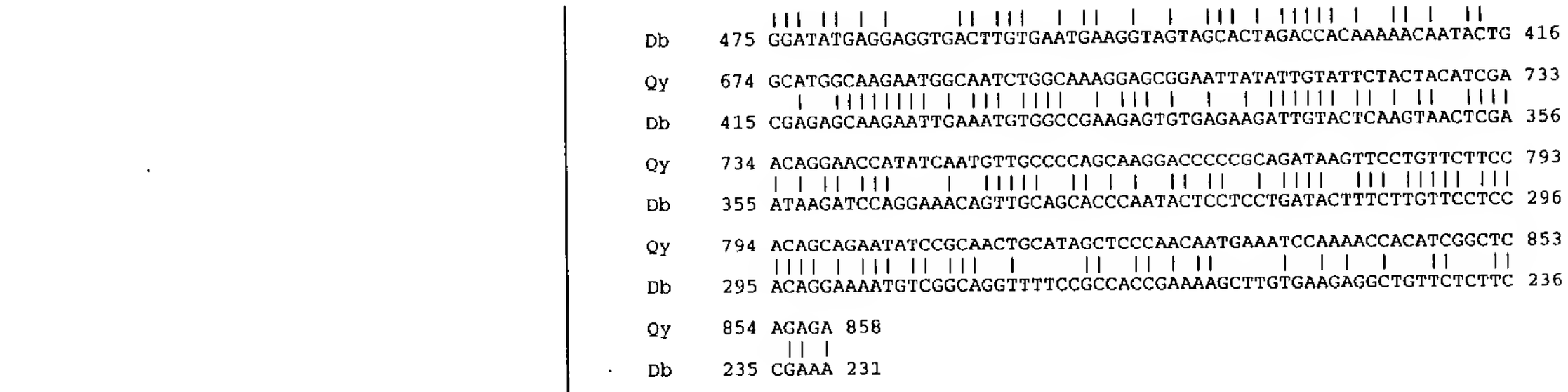

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